

PATENT
Page 2 of 3

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comprising a cassava SBEII cDNA as shown in Figure 9 (plasmid pSJ 101) of the application was transformed into plants in antisense orientation through the use of an agrobacterium mediated transformation method, as detailed in Example 3. These plants, identified as 'line 9.18', were provided to me so that I could analyze or direct the analysis of the starch produced by these plants.

4. Under my direction, the physical properties of the starch from the plants transformed with a SBEII cDNA in antisense orientation (i.e., 'line 9.18') were tested in comparison with the properties of starch from untransformed control plants. The results of these tests demonstrate that the starch produced by the plants transformed with a SBEII cDNA in antisense orientation has altered properties. Results of these tests are attached as Exhibit B. Exhibit B is a graph showing the results of two replications (A and B) of a viscosity test of 'line 9.18' and the control. As shown, 'line 9.18' had a 20% increase in peak viscosity and a 50% increase in hot paste viscosity as compared to the control. These results demonstrate that the transformation of plants with a SBEII gene in antisense orientation results in the production of starch with altered properties.
5. I further declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

By: 

Dated: 13 November 2002

Exhibit A

Joseph L. Emling

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Fishers, Indiana 46038
Phone: (317) 598-1426
Email: joe1174@insightbb.com

Education

Indiana University Kelley School of Business

Indianapolis, Indiana
Master of Business Administration, May 2003
Major in Finance, Concentration in International Strategic Management

University of Illinois at Urbana-Champaign

Urbana, Illinois
Graduate Advanced Studies Certificate in Crop Sciences, August 1998
Concentration in Plant Genetics

Virginia Polytechnic Institute and State University

Blacksburg, Virginia
Bachelor of Science, May 1994
Majors in Biochemistry and Chemistry
Undergraduate Thesis: *Isolation, cloning, and characterization of the pectate lyase gene of Erwinia carotovora, and its potential use in creating a biocontrol agent for crop production*

Professional Experience

Project Supervisor

National Starch and Chemical Company, Plant Genetics Group
Indianapolis, Indiana, 1999-present

- Improved specialty maize varieties for a \$27 million value contribution
- Served on product quality team which solved issues with nutritional ingredient, leading to \$6 million in sales
- Invented unique method of producing specialty grain which maintains product purity and maximizes economic benefits to producers
- Authored study of manufacturing quality issues which led to an 85% reduction in customer complaints
- Analyzed processes and designed databases to improve laboratory efficiency by 60%

Research Chemist

National Starch and Chemical Company, CFS Research
Decatur, Illinois, 1997-1999

- Invented novel starch product with projected \$20 million annual sales
- Managed \$1 million office construction and relocation project on time and under budget
- Led change management and quality training efforts

Chemist

National Starch and Chemical Company, Natural Polymer Research
Bridgewater, New Jersey, 1994-1997

- Created novel food ingredient and successfully sampled to three major customers
- Redesigned key procedures to increase sample throughput by 500%
- Invented highly functional product for European food ingredients market

Patents

US 5,954,883: *Waxy maize derived from grain of a plant which is heterozygous for the sugary-2 allele*

EP 1229049: *Stabilized or stabilized, crosslinked waxy potato starch*

US Application: *Grain production method for maize starch with novel functionality*

US Application: *Method of grain production for heterozygous waxy sugary-2 maize*

Other Experience

Team Leader

Product Mix and Pricing Strategy Team
Kelley School of Business - China in Transition Consulting Project
Guangzhou, China, July-August 2002
Client Award for Best Consulting Team

Company Liaison

Indiana Health Industry Forum
Entrepreneurial Assistance Panel
Indianapolis, Indiana, February-November, 2002

Founder and President

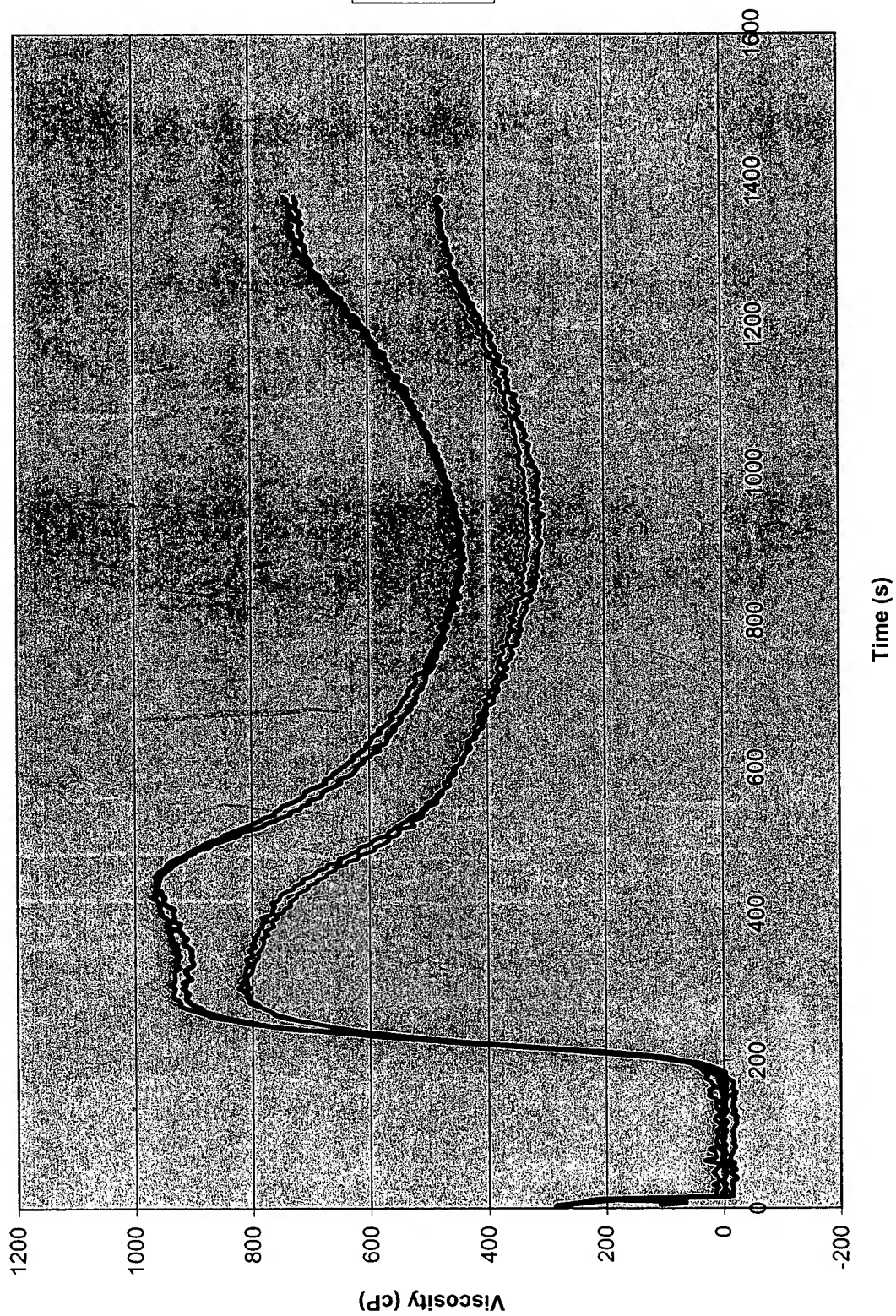
Society for Undergraduate Research
Blacksburg, Virginia, August 1993-June 1994

Memberships

Venture Club of Indiana
American Chemical Society
American Association of Cereal Chemists
People for Pets in Parks

Exhibit B

RVA Viscosity Profiles of Selected Transgenic Cassava Starches



RVA Viscosity Profiles of Selected Transgenic Cassava Starches

